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EFFUSION.

WOULD NOT THORACENTESIS HAVE SAVED LIFE?

EUROPEAN AND AMERICAN TREATMENT OF PLEURISY.

READ BEFORE THE SECTION OF CLINICAL MEDICINE AND
PATHOLOGY OF THE SUFFOLK DISTRICT MEDICAL
SOCIETY, DECEMBER 12, 1881.

presented
BY
HENRY I. BOWDITCH, M. D.

3

[Reprinted from the *Boston Medical and Surgical Journal* of
January 19, 1882.]



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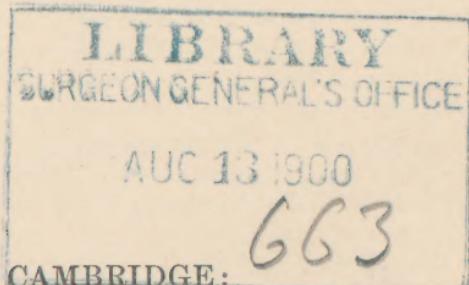
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ROPEAN AND AMERICAN TREATMENT OF PLEURISY.

BY HENRY I. BOWDITCH, M. D.

THE secretary of the section having requested me to prepare a paper for this evening, I thought that I could not aid him better than by giving a *résumé* of two fatal cases of acute pleuritic effusion, in which I believe that thoracentesis would probably have saved life. One of these cases occurred in Boston about twenty-five years since, and to it I was called in consultation. The other happened in 1873, under the care of an eminent German teacher, in a German capital. Both cases have been painfully instructive to me. If I seem to criticise too severely the treatment pursued, please remember that I think life was sacrificed by most grave errors of commission in one, and of omission in both.

I shall relate in some detail the German case first.

It was that of an American student of medicine. His family tendencies were consumptive, his mother and uncle having died of phthisis. He had been liable to severe colds accompanied by cough, but I cannot learn of any severe pulmonary attack. The autopsy, however, proved that, at some antecedent period, he must have had an attack of pleurisy, as proved by adhesions of the pleurae. He had been able to walk in Switzerland with able-bodied young men without discomfort, and all¹ my informants assure me that he

¹ They were three in number. All of them were in close attendance during his last illness, and had knowledge of him during several months before that time.

4 *Two Fatal Cases of Pleuritic Effusion.*

had no settled cough or other symptom sufficient to prevent him from attending at the medical class, until within a week of his death. There is no doubt, however, that, owing to certain domestic afflictions (loss of a father, etc.), his mind had been much disturbed, for a few months before his last illness, and one, in daily intercourse with him, remarked that he did not seem quite so energetic as before. He was tired more easily, and small incidents seemed to annoy him, and at times he was worn and exhausted. He was daily at his work, when the following incidents occurred, which may be arranged in three tolerably distinct periods :—

First Period. It lasted about nine days. It seemed to be simply a severe naso-pharyngeal catarrh — and no *serious* symptom was noticed.

Second Period. This extended from the ninth to the fourteenth day. He became very insidiously and gradually more ill — without, however, any marked symptom, save a gradually increasing dyspnoea. This symptom annoyed him, and was inexplicable at first — although, before any medical treatment was instituted, the patient himself recognized, by percussion, that something caused dullness on percussion of the lower part of the left breast and side. But he had no cough, nor sputa, nor pain in the side. As one friend described him, he still “with his usual pluck and determination continued going to his lectures,” and this, too, when, according to another, he had so much dyspnoea that he was compelled to stop at the top of one staircase and rest, before going up the next flight. There was increasing lassitude. His pulse also began to rise, and the temperature between the ninth and fourteenth day rose from 102.2° F. to 104.8° F. — the mean being 103.8° F. The appetite was a little lessened ; the bowels were well. He was evidently gradually growing more ill, but, according to one correspondent, a day or two elapsed after he had recognized the dullness above alluded to, before the patient would consent to summon a physician. At or about

this time the following physical signs were found by one of my informants: "Dullness of the lower part of the left side of thorax from a point an inch below the nipple, in a horizontal line around the chest. The respiration was bronchial in the region of flatness, and 'rough' over the whole of the left lung. Change of position did not, *materially*, change the sound. The heart was dislocated toward the right; and its apex was felt in the middle of the sternum more strongly than elsewhere. Only one occasional râle was heard over the whole of the left lung. At the back, near the spine, and on a level with the angle of the scapula, a slight friction sound was heard in a space of two by one inches."

"On the next day, fifteenth from the outset of the first period, the dullness of the chest arose at least one inch, and the dyspnoea became greater." Yet the student still was about at his work and no proper medical treatment had been commenced. But the friends, then becoming alarmed, persuaded him that an eminent German clinical teacher and physician must be called in, and by their request that practitioner consented to take full charge of the case. His diagnosis was "acute pleurisy," with effusion. His treatment was followed until death took place, but it soon became very distressing to three of my informants who were daily cognizant of it. None of them felt at liberty to suggest a variation, although one, subsequently, alluded to thoracentesis. But he was summarily checked by the remark that it was "too early to think of that operation."

This treatment was as follows, as I gather from the notes taken at the time or from conversations I have held with my informants. It marks the —

Third Period. Commencing with the treatment, it lasted till death took place, in three or four days.

The patient was immediately ordered to keep his bed; he was not to read or talk or even listen to conversation. In other words, absolute quiet and rest were enjoined.

6 *Two Fatal Cases of Pleuritic Effusion.*

His diet was to be milk, purée of potato (potato soup or mashed potato), apple, plum, or pear sauce, bread rolls. No tea, coffee, or chocolate.

For medical treatment it was ordered that ten cups should be applied to the side, six of which were to be dry, and four were to be scarified. Twelve ounces of blood were thus drawn from the front and back of the left chest. He was to take one of the following powders every two hours :—

R <small>v</small>	Calomel	grs. xiiij.
	Sugar	grs. iii. M.
Divide in ch. vi.		

The next day (seventeenth from beginning of corzya) increase of symptoms, and the following was ordered :—

R <small>v</small>	Decoct Althæa.	3 <i>iiiss.</i>
	Sod. Nitrat.	3 <i>i</i> + grs. xv.
	Syrup	3 <i>ss.</i> M.
3 <i>ss.</i> every 1 <i>½</i> hours.		

Sennæ electuarii ; a heaping teaspoonful before breakfast.

The effect of these remedies are thus given by one of my correspondents :—

“ Condition of patient on the day (sixteenth) after cupping, temperature 103° F., pulse 104, respiration 25. Next morning temperature 101° F., pulse 102, respiration 23. Dullness remained unchanged; five stools during the day. On the following day (eighteenth) there was a sudden increase of the effusion, the dullness reaching to within one inch of the clavicles. Treatment continued, with diarrhoea still remaining. Collapse and almost instant death in the afternoon.”

One of my informants says that, while making efforts for a dejection, this collapse took place, and ere long death ensued. Another assures me that, at the morning visit of that day, the attending physician expressed himself as wholly satisfied with the condition of the patient; and this notwithstanding the rapid increase of the effusion, and increasing debility of the invalid.

Autopsy, thirty hours after death. The left pleural cavity was found two thirds filled by serum and a jelly-like substance, about one third being serous and two thirds of this jelly-like mass, which was partly fibrinated in an extremely delicate manner. A "few incipient tubercles" were found in the layers of the left parietal pleura; but none, so far as my informant can remember, were found in the pulmonary pleura or in either lung, which seemed healthy. The left lung was very much compressed towards the spine. One informant, aided by the assistant of the pathologist of the school, examined microscopically the heart fibres with reference to their being fatty. No fat was found. After the sudden death, rumor had suggested that it was owing, probably, to a fatty degeneration of the heart. The organ was small and looked weak, and, owing to its displacement, the great vessels were so twisted that the circulation in the lungs must have been interfered with.

The death was a surprise to all. Before it actually took place, one of my informants, seeing the necessity for immediate thoracentesis, notwithstanding the previous opposition of the regular attendant, hurried for his tapping instruments, but it was too late. The medical attendant said it was an unusual case; he had never but once met with one similar.

Before making any remarks upon this case, allow me very briefly to bring to your notice the Boston case, which, as I have already stated, happened many years ago, and in which I failed of doing what I now think would be my duty, were a similar one to present itself. The two cases are entirely analogous in one particular, namely, the failure on the part of medical attendants to tap the chest, whereby life might have been saved in both instances, or perchance life restored in one, if an opening in the chest had been made and artificial respiration had been instituted.

About twenty-five years ago, after three or four years of successful use of thoracentesis as a means of

8 *Two Fatal Cases of Pleuritic Effusion.*

relief or cure of pleuritic effusions, by means of Dr. Wyman's suggestion of an exploring trocar and suction pump (by aspiration, in fact, as the operation is now called), but before it had been cordially received by the profession generally, I was summoned to a case in consultation. I was surprised to be called by one who, I knew, had been one of the ablest of the opponents of the operation. The patient was a little child, who had been acutely suffering some days from orthopnoea caused either by an effusion of fluid, filling the whole of the left chest, or perfect hepatization of the left lung, the practitioner could not decide. Upon my learning that the heart was at the right of the sternum and there was no crepitous râle, I told him that, undoubtedly, there was a large effusion, and that thoracentesis was called for instantly. We had a long discussion as to the dangers connected with the operation, at all of which I only laughed, and told him that it was one of the simplest and most harmless. He seemed convinced, and it was agreed that we should meet the following morning, prepared to operate. We met at the appointed hour, but the physician, being, as I found, still in doubt about the propriety and safety of the operation, called me into a lower room, before I saw the patient, in order to talk further upon the matter. While thus engaged, a sudden summons from the sick chamber came to us, with the statement that the patient was dying. We, of course, stopped all debate; and ran up stairs, just in time to see the last gasp and the glazing eyes of death. Without doing or saying anything, we waited a minute or two until entirely satisfied that the patient was dead, when we turned and left the room. I have never ceased to look back upon that event with the greatest sorrow, not to say some self-reproach.

And here allow me to ask you a question and at the same time to answer it decidedly. You will see its pertinency to the two cases just related. If any of you should happen to be present at or immediately after death,

connected, as these two were, with pleuritic effusions, what ought you forthwith to do? I answer, unhesitatingly, plunge any instrument you may have at hand, whether aspirator, trocar, penknife, or sharp-pointed table knife, which may be found in any house, instantly, into the side of the chest, where you know the fluid is lying that has taken away breath. Let that fluid run out, regardless of all lack of disinfecting spray, or of any carbolized material, deemed so necessary now-a-days. Then, with an assistant to watch and prevent if possible the external air getting into the pleural cavity, while not checking the outward flow of the effused fluid, do you excite artificial respiration, by manipulating properly the walls of the thorax and abdomen, and by blowing air into the lungs from your own lips. For the moment, lay aside all fear of germs of disease, for it is better to have impure air than no air at all. Of course, other accidents than apnea may be the cause of the sudden death in these cases. But because we cannot meet all contingencies, is no reason for our not trying to meet one of the most obvious of them.

Let us now return to the European case. I do not remember to have ever met with one more instructive, while so painful in the suggestions it gives rise to. Under the light of our New England experience, such gross errors, as I deem them, of omission and of commission, seem impossible. But we have witnesses in the notes and observations taken at the time by deeply interested observers. The data were given to me separately, and the accounts support each other. Two of the reporters, medical students, recognized the effusion, its latency and amount, before the professor was summoned to treat the case. Both were surprised at the methods pursued by him. One ventured, as above stated, to suggest thoracentesis; but the proposal was summarily dismissed, on the ground that it was "too early" in the disease for the proposition to be entertained. And yet I cannot but hope that no New Eng-

10 *Two Fatal Cases of Pleuritic Effusion.*

land physician would refuse this simple operation in such a case, and for such a flimsy reason. Then, too, as to the medical treatment, I do not believe that any New England (may I not say American?), well-educated practitioner of medicine would, even nine years ago, have been unwise enough to use, in such a case, calomel in repeated doses and senna, day after day, so that a severe diarrhoea was kept up, and, at the same time, order such a restricted diet as was used in this case.

Moreover, I should certainly hope that no intelligent practitioner here would *dare to wait*, instead of instantly tapping the thorax, when he should see the fluid *increasing* daily, with rapid prostration of the powers of the patient under such heroic, mediaeval practice, and with dyspnoea ever augmenting. A man who, under such a state of things, *would delay operating because of the early period of the disease* would do so at the peril of the patient's life. I hold that *the question of time, the disease has lasted, should never be used as an argument against thoracentesis, in a case of marked and severe dyspnoea*. In this case it will be remembered that dyspnoea was almost the sole symptom, and was somewhat severe, even before the patient would allow that he was ill enough to have a physician called.

The treatment, I think, should have been thoracentesis on the first or the second day after the physician was summoned, and the system of drugging pursued seems to me most fatal in its tendency. I should have advised an alterative and a tonic course internally, and external irritation by means of the ethereal tincture of iodine ($\text{E}ss.$ iodine to $\text{F}i.$ of ether); but not cupping and extraction of blood in such a case. A nutritious, perhaps non-stimulating, diet should be given, and the use of mild soups or broths, or in feeble constitutions even the chewing, and perhaps swallowing, of beefsteak allowed, and, at times, perhaps a little wine or whiskey might be added. If called to a case at an earlier stage

of the disease, with little or no pain in the side and no serious dyspnoea, I usually order iodide of potassium three times a day internally and the ethereal solution of iodine, above named, externally over the affected side, and direct the patient to keep in the house. In most cases of this nature, I find in two or three weeks the effusion yields without operation. If the dyspnoea become severe at *any time*, I immediately tap the chest, as the only safe remedy.

I regret to feel that in our case in Boston twenty-five years ago thoracentesis was fatally neglected, and so it was with the case in Germany. Both patients died, when they might have lived, had thoracentesis been performed. But I must protest again most heartily at the drastic and heroic mediæval treatment pursued by the German attendant, under which rapidly the strength of the patient sank. Some may urge, against my judgment in this case, that thoracentesis and a different treatment would probably not have saved life.

It may be said, *first*, that the fact that so large a part of the effusion was gelatinous it would have been difficult if not impossible to remove it. Any fluid, taken from the pleural cavity by thoracentesis, frequently coagulates almost immediately after removal. No one can be sure that the large, jelly-like mass, found in this case, may not have been mere fluid during life. About thirty hours had elapsed before an autopsy was made, and in this period coagulation may have increased very much. Let us for the moment admit the difficulty, although by no means the impossibility, of drawing from the chest a sufficient quantity of fluid to have saved life. My reply would be that in my *expérienee* hitherto in three hundred and sixty-six operations on two hundred and thirty-two patients I have not more than twice failed to get at least *some* little fluid. In one of these cases a large, solid tumor filled one pleural cavity.

Again, I have almost invariably noticed that when

12 *Two Fatal Cases of Pleuritic Effusion.*

even *the smallest quantity* is removed the patient is relieved, the simple acupuncture, as thoracentesis really is, in such a case, seeming to do good and to stimulate nature towards a cure.

Still further, supposing that we are satisfied that our trocar has entered a gelatinous mass, which cannot be drawn out except with difficulty or not at all, I see no objection to reversing the pump, and injecting into the chest warm water, which had been previously boiled and thus made antiseptic, and immediately withdrawing it. This might be cautiously but repeatedly done, and thereby, perchance, we might succeed in getting at any supernatant fluid lying, as in this case, over the jelly-like mass, a portion of which might obstruct our fine trocar in the early part of the operation.

Another objection to the use of thoracentesis in this particular case may be urged, the fact, stated by one of my informants who saw the autopsy, that "incipient tubercles" were found in the layers of the pleural cavity of the diseased side, and that the hereditary tendency to consumption being so strong, the patient, though temporarily relieved, would have died of consumption, at last.

In answer it must be remembered that there were "no signs of tubercle in the pulmonary pleura, nor in the lungs," and that all the previous history of the acute attack, with the symptoms that occurred after the attack, and the short duration of the whole are against the idea that it was "a tuberculous case," and that "incipient tubercle" was the *cause of the pleuritic attack*. I hold, therefore, that these "incipient tubercles" (whatever that term means) may possibly have been the *consequence of the pleural inflammation rather than its cause*. If this be true, what was to prevent them from wholly disappearing, if the pleuritic trouble had been cured. The word "tubercle" has been, for the past half or three quarters of a century, a scarecrow for the profession. Indeed, it is a word not to

be spoken lightly of, but, in such a case as this, it seems to me to be worth nothing as against the propriety, nay, the necessity, for thoracentesis, even if it be for nothing but relief to dyspnoea.

Gentlemen, I have finished with these two cases. As I have brought them together, and have seen what valuable instruction can be drawn from them, they have become more and more interesting to me. But some may ask, Why bring up from the past such scenes of painful interest, showing only the folly or failures of the profession? My only reply is that we often gain much more from our blunders than from our successes. Still further, I have thought that it would be almost wrong for me to keep silence, after hearing, only recently, of the treatment in the German case. Permit me, in conclusion, to present the following train of thought and advice, which I shall give to any patient of my own, who may travel on the Continent of Europe. If we believe that the internal treatment followed in the German case, and the total neglect of thoracentesis, by one of the most eminent clinical teachers of his time, be the usual course, likely to be followed by his pupils now spread over Germany, I think the opinion I shall express, and the advice I shall give, proper and just. If, moreover, it be a fact that thoracentesis, as performed upon the European Continent, has proved fatal in many instances, whereas I have yet to learn of any such fatality in New England, and, I think, in America, and when I myself have never met with a death, I am persuaded that the operator is in fault in Europe. I believe the operation, if *carefully done*, with due regard to the *first moment* of suffering on the part of the patient (cough, dyspnoea, stricture of chest), and if immediately thereupon the trocar be removed, is as simple and innocuous as venesection or vaccination. Such a remark does not apply to the operation as performed in Europe.

My advice, therefore, to my patient visiting Europe will be as follows: If you find yourself threatened

14 *Two Fatal Cases of Pleuritic Effusion.*

with pleurisy, send for an American physician, and trust to him rather than to any other under the influence of continental therapeutics. One exception I feel bound to make. If you are in Paris, summon Mons. Dieulafoy, immediately. He does not decline thoracentesis when necessary ; and his rules for the operation are perfectly safe.

This may seem gross presumption on my part, nevertheless I shall feel it my duty to give the advice, upon the argument that, at times, much suffering may be prevented, and, possibly, some lives may be saved.

